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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Yellowstone NATIONAL PARK

FILE NO.

~~Chief Ranger~~ Monthly Report,

May 1921.

C.A.L.

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OF SUPERVISOR

June 10, 1921.

Dear Sir,

The following is my report on conditions in Yellowstone National Park, and on the operation of the Park, for the month of May, 1921:

GENERAL CONDITIONS:

Weather.

The following weather records are quoted from report for May of the Observer in Charge of the Local United States Weather Bureau at Mammoth Hot Springs (Park Headquarters):

Temperature: Monthly mean, 44.6°, is 2.6° below normal. With the exception of the first six days, the temperature was consistently below normal. There were 11 days with temperature slightly below freezing, 26° being the lowest.

Precipitation: Total, 4.43 inches, is 2.27 inches above normal. This total is not only the greatest amount of precipitation for May, but is also the greatest monthly total for any month during the past ten years. The first five days were generally fair, but the remainder of the month was characterized by cloudy and unsettled weather with almost daily precipitation. On the 27-28th, 1.43 inches fell in 24 hours, which is the greatest 24-hour precipitation for any month since October, 1908, when 1.34 inches occurred in a 24-hour period.

Snowfall: Total, 11.3 inches, has been exceeded twice in May, but the fact that the entire amount fell in one storm, and in practically a 24-hour period, renders it unprecedented for all months except February and October. A greater 24-hour snowfall has occurred but twice during the period of record, namely, 14.0 inches in October, 1917, and 13.1 inches in February, 1908. The greatest depth of snow on the ground during the storm was 10.9 inches at noon

of the 18th. However, the snow melted rapidly and at 6 p.m. of the 27th but 1.6 inch remained on the ground.

Wind: The wind movement was unusually light, the maximum velocity being 28 miles per hour from the southwest on the 21st.

Humidity: Percentage of possible, 48, is somewhat below normal.

The Monthly Meteorological Report for May is enclosed.

The continuation of the temperature below normal and precipitation above normal tends to hold back the opening of spring, clearing roads of snow, and high water in streams. Growing conditions on the range have been excellent, however, due to the unusual amount of moisture, and a fine crop of forage is assured. Ranchers in adjoining states are hopeful of an excellent crop.

The big snowstorm of May 27-28, when 11.5 inches of heavy snow fell within 24 hours is unprecedented for May. The weight of the snow broke off many limbs of trees at Headquarters, but otherwise no special damage was done except to soak the roads. Precipitation in this form is very beneficial to the range as it melts slowly and penetrates deeper into the soil.

Snow and Road Conditions.

The usual big snowdrift in Golden Gate was shoveled out on May 1st by employees of the public utilities assisted by a few rangers. By May 18th the snow between Park Headquarters and Harris had melted sufficiently so that a ranger went through on horseback. The road to Cooke was opened so that the mail went through in a light truck on May 16th. The roads on the west side of the park were open, as usual, earlier than were those on the Canyon side. On May 8th a car that had been kept at Upper Basin all winter by the winter keeper came through, without difficulty, as far as Gibbon Meadows, where a snowdrift was encountered, but this disappeared a few days later.

By the end of May cars could pass from Shoshone to Harris, West Entrance, and Upper Basin, and wagons had been through to Canyon and Lake. Snow was

melting rapidly, and the roads were muddy and travel was restricted to light rigs that were absolutely necessary so as to save rutting the soft places and causing much damage. May 28th we began blasting the deep drifts in Sylvan Pass with TNT, so as to loosen them up and facilitate their melting.

On May 31st I returned from Cody to Hale Lodge, and on the following morning went into the park via the east entrance, walked over the snow through the Pass for about seven miles, where I was met by a car and gone in to Mammoth without difficulty.

I found the road from Cody to the east entrance generally muddy and badly rutted up by traffic. I made a careful inspection of snow conditions through the pass and found the dynamiting working successfully, throwing out some of the snow, and where it is so limited that it does not throw it out, it loosens it up so it will melt faster.

Travel.

Travel during May was heavier than usual. The travel by entrance was as follows:

<u>Entrance</u>	<u>Days</u>	<u>People</u>
North,	44	121
West,	7	17
Total,	51	148
<u>People Mares</u>		<u>5</u>
TOTAL,	51 days	154 people

For the same period in 1920, but 28 people entered the park, an increase for this year of 120. The Chief Ranger's Monthly Travel Reports for May, 1921, and for May, 1920, for comparison, are enclosed herewith.

Labor and People's Needs.

Laborers are very plentiful, and many men are out of work entirely. Even ranchmen in this vicinity experience a difficulty in getting all the help they want, and are paying but \$40 to \$50 a month, board and lodging, which is less than half what they

had to pay last year. Day wages in other lines cannot be lowered in the same proportion as living expenses in connection with ranch work represent a much larger portion of the total pay. Stockmen are still drawing about the same wages as heretofore, but we have less difficulty in procuring their services. Prices of all kinds of supplies are becoming noticeably lower from month to month.

II. PERSONNEL:

Employees.

On May 1st, there were 114 employees on duty under this office, which had been increased on May 1st to 117.

The following list shows the number of employees of various classes serving under appointment during the month, with a statement in general of the kind of work in which they were engaged:

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
1	Asst. Engineer	In charge of engineering work in the park.
5	Clerks	1 Disbursing Agent and Purchasing Clerk; 1 on vest account work and property; 1 stenographer-typist on orders, proposals, and vouchers, and assisting in Information Office; 1 on time keeping; 1 stenographer-typist on stenographic work and files.
2	Electricians	Read meters, did necessary line work, and operated power plant regular shifts, including Sundays.
3	Farman	1 in charge of stables at headquarters, and repairing teams and harness; 1 repairing sprinckler wagons; 1 on road maintenance.
1	Telegraph Operator	Sent and received all Government Western Union messages; operated one shift on telephone switchboard.
1	Telephone Switchboard Operator	Operated telephone switchboard, daily shifts, including Sundays.

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
1	Master Mechanic	In charge of shops, and of repairs to heavy road machinery.
1	Blacksmith	General blacksmith work, including shoeing horses in shop, overhauling and repairing tools and equipment.
1	Painter	Decorated quarters at headquarters, also painted signs and equipment.
1	Lineman	In charge of telephone and telegraph system. Did emergency work and installed instruments.
2	Laborers	Trucking, freighting, work in warehouses, and miscellaneous work at headquarters.
1	Postman	Worked in storehouse loading and receiving supplies, and carrying property.
1	Harvard and Master of Transportation	In charge of all transportation, and of storehouse.
1	Buffalo Keeper	In charge of two buffalo herd.
2	Asst. Buffalo Keepers	1 assisting buffalo keeper; 1 in charge of log rading operations at Slough Creek.
1	Furk Naturalist	Scientific research work and developing museum.
1	Plumber	In charge of general plumbing, and repairs to same at headquarters.
2	Automobile Mechanic	Repairing motor trucks and touring cars.
1	Watchman	Made hourly patrols during night at headquarters, took care of fires, and kept furnace going during the night.
2	Carpenters	1 repairing bridges and miscellaneous work; 1 repaired buildings at headquarters and overhauled equipment in shop.

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
1	Chief Ranger	In charge of ranger force.
1	1st Asst. Chief Ranger	In charge of northern district.
1	Asst. Chief Ranger	In charge of southern district.
23	Park Rangers	In charge of ranger stations, doing patrol work, and constructing cabins; 1 on special duty as Acting Assistant Chief.
1	Temporary Park Ranger	Assisting in Chief Ranger's office.
1	Fireman	In charge of furnaces at headquarters.

In addition to the regular employees listed above under appointment, the following were employed temporarily by the day:

	<u>On May 1st</u>	-	<u>On May 31st.</u>
Foreman,	1		0
Mechanics	5		5
Laborers	17		18
Skilled Laborers	19		15
2-H Teamster	9		10
4-H Teamster			1
Lineman			1
Cooks	3		5
	<u>54</u>		<u>55</u>

Leaves of Absence.

During May, annual leaves of absence were granted as follows:

Sam T. Woodring,	Park Ranger,	11 days - May 5-17
Carrie O. Hausesser,	Stenog.-Typist,	1 " - May 7
Nellie Roach,	Telephone Operator,	1 " - May 7-8
Wm. J. O'Loughlin,	Watchman,	1 " - May 7
Wm. L. Bickst,	Carpenter,	1 " - May 7
G.T. Dustman,	Clerk,	1 " - May 12(noon)-13(noon)
C.A. Lindsley,	Asst. Supt.,	1 " - May 14-15
Roy X. Gray,	Laborer,	1 " - May 11
Nellie Roach,	Telephone Operator,	13 " - May 16-31

Wm. J. O'Loughlin,	Watchman,	13 days-May 16-31
John H. MacDonald,	Laborer,	1 " -May 14 (noon)
H.B. Sander,	Telegraph Operator,	1 " -May 14
A.L. McLaughlin,	Park Ranger,	3 " -May 16(moon)-19-moon
H.B. Sander,	Park Ranger,	4 " -May 1-5
A.L. McLaughlin,	Park Ranger,	3 " -May 24(moon)-27(moon)

Appointments.

May 23: Andrew E. Edwin, Clerk, \$1200 p.m.
 May 10: Edward Burkett, Park Ranger, 1200 p.m.
 May 20: Ira D. Fleming, Asst. Buffalo Keeper, \$1200 p.m.

Resignations.

May 16: A.M. Burney, Asst. Engineer, \$2400 p.m.
 May 16: John H. MacDonald, Asst. Buffalo Keeper, \$1200 p.m.

Resignations.

Warren Hutchings, Asst. Buffalo Keeper, resigned, effective at close of May 15, 1921.

III. WORK COMPLETED:

(a) Construction of Physical Improvements.

None completed under this office during the month.

The Yellowstone Park Camps Company completed the Boys' Camp Unit, at Camp Roosevelt, consisting of Council House 24 x 40 feet, with stone fireplace, concrete swimming pool 20 x 40 feet, and 8 tent houses. This work was begun last fall. This Company also completed its new modern laundry at Mammoth Camp. (This new steam laundry is a model of its kind, and has been passed upon by an expert as one of the most modern laundries in the United States. The machinery is all up-to-date, each unit being run by a separate electric motor, by current furnished from our power plant. It has a capacity quite sufficient to handle all of the work of the Camps Company from all its permanent camps in the park.

(b) Maintenance and Repair of Physical Improvements.

On May 5th a crew in charge of Foreman Webb started from headquarters at Mammoth for the Lamar River to build new trestles on the bridge, where the Cooke City road crosses that stream. A camp was made near Geode Creek for two days, while the crew shoveled snow from the road between the twelves and fourteen mile points. On May 7th, the road being clear,

the camp was moved to a place near the sixteen mile post, where they remained until May 11th, cutting timbers for the bridge, then moved on and established a camp at the bridge site.

Six trusses, each 60 feet in length, were framed from 16 inch logs. The false bents under the bridge supported the structure, while the old trusses were removed and the new ones set up. The worn rot planks on the bridge were replaced with new ones, and the two log crib piers were refilled with rock.

The work was completed May 31st. The average crew on the job consisted of foreman, cook, 1 teamster, 1 team, and 4 laborers.

(c) Miscellaneous Improvement Work

The ranger force built a new root cellar, of small dimensions, in connection with Lake Station. At Snake River Station a fence was built enclosing about 30 acres as a pasture for the saddle horses. Another fence on Lapine Creek, enclosing about 200 acres, was put in repair as a pasture for surplus horses at Headquarters.

(d) Service to the Public

There being but few visitors, this feature did not receive much attention. The few who visited the Information Office were given game directions and such special advice and assistance as was practicable.

Information Service:

Yellowstone Information Circulars distributed,	277.
Other parks,	38
Pamphlets sold, fish,	1

IV. WORK IN PROGRESS:

(a) Construction of Physical Improvements.

None in progress except as reported under other headings.

(b) Maintenance and Repair of Physical Improvements.

Sprinkling System Repairs: The crew under Foreman Farrell continued work during the month making repairs to the road sprinkling system. Several new tanks were installed and old ones calked and made ready to hold water. Pipes and

ditches that carry water to the supply tanks were cleaned of debris and made water tight.

This crew also devoted five days to raising the old frame building opposite the "Dee River", which had become dilapidated and beyond repair.

The average crew for the month was Foreman, cook, 1 team, 1 teamster, 2 rough carpenters, and 2 laborers. The camp was located at Smooth Hot Springs until May 19th, then moved to Willow Fork.

White's Crew, East Forest Reserve: The crew in charge of Foreman White, engaged in making repairs to the roads and bridges in the East Forest Reserve, continued that work throughout the month. The rock filled log crib, situated about 1/4 mile east of the park line on the left bank of the Middle Fork of the Shoshone River, on which work began April 14th, was completed May 11th. The size of the crib is 120 feet long, 8 feet wide, and 7 feet high, inside measurement.

From May 14th to 16th, general road maintenance work was performed; the road was graded, gravel hauled to fill ruts and soft places, and a number of small pole culverts constructed. May 18th the camp was moved to a point near Fifty Mile Creek. The roads in that vicinity were repaired and one twelve foot span pole bridge and several small pole culverts built. May 20th the camp was moved to Lily Flat, 9 miles east of the park line. After making road and bridge repairs in that locality, they moved to Blackwater Creek on May 21st.

On May 27th two men were taken up to Sylvan Pass, where they stayed the rest of the month blasting snow and ice in the big drifts.

The crew for the month consisted of Foreman, cook, truck driver, 4 skilled laborers, 2 teamsters, 2 teams, and 2 casual laborers.

Conohan's Crew: The crew in charge of Foreman Conohan, who were engaged the previous month crushing and hauling rock on the road along the Gardiner River, about one mile from the Gardiner station, continued that work until May 15th. Due to bad weather conditions and engine trouble on the Caterpillar Tractor, which supplied power to run the crushers, very slow progress was made. Approximately 300 cubic yards of crushed rock was crushed and hauled on the road. The rock was spread to a depth of three inches and thoroughly rolled.

From May 18th to 21st the crew was engaged in graveling portions of the North Entrance Road, also dismantling the rock bunkers and crusher and moving them to Mammoth.

On May 22nd the crew was moved to Mammoth, where it remained until May 25th, while a portion of the crew hauled gravel on the road to Gardiner, and 4 teams and 4 men worked on the old water supply reservoir, clearing the mud and vegetation from the bottom.

The crew was moved to Golden Gate on May 25th, where they rounded the rest of the month hauling gravel from the pit on Goose Lake Flat to the road between Golden Gate and Mammoth.

The size of the crew for the month averaged foreman, cook, waiter, steam roller engineer, tractor engineer, 1 track driver, 1 6-horse teamster, 1 graderman, 5 2-horse teamsters, 7 teams, and 8 laborers.

(c) Miscellaneous Improvement work.

The park ranger force maintained necessary patrols, and also regulated traffic over the roads, restricting it at times when the roads were in such a wet condition that they would be badly damaged by travel. This work added much to their duties, as it required considerable patrolling to keep in touch with the conditions of the roads at all times, but especially after heavy storms. In several instances they also assisted very materially in removing alders and other obstructions, clearing out snow, and in repairing short bridges in the road caused by washouts, and keeping the telephone lines in working order.

At Gallatin Station, the frame barn which was wrecked and moved from an old site last month was rebuilt near the present station, the work being completed with the exception of windows which have to be sent out from Headquarters.

The buffalo keepers cared for the Snow herd on Lamar River, and did repair work on Jensen and Dickens. One irrigator was employed the entire month at the Lamar Ranch to water the meadows. The assistant keeper, at Slough Creek, kept the meadows there watered and devoted the rest of his time to clearing up the premises and making slight improvements to corrals, putting a new floor in the stable, etc.

Park Naturalist Skinner continued management of the Information Service as required to fulfill the wants of inquirers. One trip of eight days was made and specimens of leaves and associated fossils collected for the museum. In addition there was a large amount of valuable data was collected, not only on these eight days, but throughout the rest of the month. Notes were written up, two manuscripts were prepared, and photograph illustrations were secured for manuscripts previously written. Two inspections of various sections of forests were made for disease and tree insects. Special studies of forestry and plants were continued. A small amount of work was done indexing books in the library. Other studies pursued by him resulted in his notes on Season Changes and Natural Phenomena, as embodied in this report.

In addition to the above, some special work was done by order of the Park Superintendent.

Employees at Headquarters hotel, and laborers employed at Headquarters, cared for the horses kept here as well as those on route to stations and road crews in the park, issuing harness and other equipment connected with the team service; did the regular sanitation work of hauling garbage and clearing grounds, moved heavy equipment to and from the shops to be repaired, and did general work on the grounds and around Headquarters.

The Plumbing Department was busy with general maintenance to inside plumbing; installed 4-inch cutting in valves on north end of water system at Summit; repaired sprinkler pipes in vicinity of Headquarters; repaired fire plugs, and a complete new plumbing system was installed in the Government mess house.

The painters painted 2 touring cars, 4 trucks, 29 gasoline tanks, and prepared piles for the tanks located on the roads for storing water for sprinkling roads. They also did small jobs repainting and maintaining employees quarters and mess houses at Headquarters, replaced broken glass in several windows, and painted a number of signs for roads, trails, names of objects, and guidance of tourists. They also repaired the broken rope on the 100-foot steel flagstaff at Headquarters and painted the staff.

Blacksmith Shop: 22 horses were shod for the rangers, buffalo farm, two road crews, headquarters barn, and the hay ranch. 340 bolts, 1080 washers, and 340 nuts were made for the Lamar River Bridge, and repair work was done for the plow and on plows, wagons, rock crusher, trucks, and passenger cars.

Carpenter Shop: Tearing out and putting in new floor, and preparing for cement range base in mess house. Building fences at reservoir, repairing screens, making new doors for garage, and getting out timbers for the Lamar River Bridge.

Garage: Repaired and worked on the following cars: 2 Bigsby Trucks, Studebaker 1-ton truck, Geo 2-ton truck, White 5-ton truck, International 2-ton truck, 2 Mack 3 1/2-ton trucks, Dodge touring car, White 7-passenger touring car, White 5-passenger touring car, Geo 3-ton truck, and the Doctor's and Park Naturalist's cars. Also little shop repairs needed, and issued gasoline and oil as required by the various trucks and cars.

The electricians and linemen kept the lines at Headquarters in repair, made new installations and replacements where required, built a new power line from the plant to the Mammoth Camp to furnish power to the new laundry installed by the Camps Company, and rewired the old building recently converted into a bank house at Headquarters.

The power plant was run about 20 hours daily, and generated during the month 12,539 kilowatt hours of current. Of this production, 1,996 kilowatt hours were sold to public utilities operating at Mammoth Hot Springs for lighting and power purposes, 469 kilowatt hours for lighting streets, and the balance of 10,423 kilowatt hours were used for lighting Government buildings and furnishing power to our shops. The peak load of 40 kilowatt hours occurred at 9:00 P.M. on May 22nd.

During the high water period for Glen Creek, which occurred during May while the snow was melting in Snake Lake Valley, considerable difficulty was experienced in keeping rocks and debris out of the flume leading to the reservoirs. This required the attention of an extra man for nearly two weeks, working under the direction of the electricians.

The meadow at the Gardiner entrance was irrigated once during May. The prospects for a fine stand of grass are excellent.

Improvements by Park Utilities.

In addition to the work at Camp Roosevelt and the Mammoth Laundry mentioned under a previous heading, the Yellowstone Park Camps Company painted the Mammoth Camp

throughout, and made a new connection with our water system to take the place of a makeshift connection heretofore in use. They also put up a few additional tents at Mammoth, continued the service of regular mechanics on the work of overhauling their motor equipment, and making tables, benches, etc., for use in the various camps. ✓

They added a new White 3-ton truck, with pneumatic tires, to their freight equipment, and adopted Chinese Fordlions as their standard color for motor transportation. ✓

The Transportation Company continued the work of repairing and overhauling its motor transportation, which includes repainting.

The Hotel Company continued the work of re-finish-
ing the interior of the Cottage Hotel for an employees' dormitory, and made excellent progress. They also built an addition to the south end of the commissary building at Mammoth, which harmonizes well with the balance of the building, which is an artistic one originally designed by Mr. Robert C. Benson. ✓ *See sketch of addition by employees*

Mr. George Whitcomb took a small crew of men to Canyon late in May to construct a power line from Canyon Hotel to his store so that he can buy electric current from the Hotel Company for lighting his store. They also have a gasoline tank to install at that point. ✓

Mr. C. A. Hamilton moved a small crew to Upper Basin and began the work of completing the addition to his store there, under the plans approved February 7, 1921. He is also continuing the work on his new store at Lake Outlet, with a view to opening it up about the beginning of the season. ✓

Mrs. A. M. Fryer, Manager of the Park Curio Shop, returned during May and has a few employees cleaning up the premises and making slight repairs and improvements preparatory to the opening of the season. ✓

Two small crews entered the park the latter part of May and went to the Lake and the Canyon to cut and deliver wood to the Hotel Company for use at the hotels in the upper park. ✓

7. WORK BEGUN:

In addition to work begun as mentioned under previous headings, the park ranger force began the erection

of a small sub-station for the propagation of fish at Fish Lake near Soda Butte Station, in cooperation with the United States Bureau of Fisheries which operates in the park. During May, under the direction of 1st Assistant Chief Park Ranger Harry Trischman, assisted by Rangers Barnett, Anderson, Ginn, and Darling, a substantial log building, in size 14 x 24 feet, was constructed of logs cut nearby. The walls of the building are 6' 6" high. Openings have been left for 3 windows and 1 door. The roof poles have been secured 6 feet beyond the wall of the building at one end, so as to form a porch. The building is ready for the roof, doors, and windows. The plans also contemplate a second log building, so as to provide a building for hatchery purposes, and another for living quarters for the men engaged in collecting fish eggs. As a part of this work and part of the expenses will be borne by the United States Fish Commission, the complete plans will not be matured until its representatives have had an opportunity to go over it and decide just what is needed.

VI. PLANS OR PROPOSED WORK

In addition to the work mentioned under other headings and now in progress, the following is contemplated;

The crew established at Salmon Gate and engaged in graveling the roads in that vicinity will continue that work until about June 10th, when it is proposed to use six of the teams for road work in other parts of the park. The two trucks and two teams left on the job will continue graveling the road across Swan Lake Flat until July 1st.

About June 7th, a crew of 10 men and two teams will be taken to Dunraven Pass, where they will begin the work of excavating and blasting the snow from the road. It is expected that this crew will have the Pass open to travel by June 15th.

The crew working under Foreman Farrell will continue the work of turning the water into the sprinkler supply tanks which it is planned to have ready by the opening of the season, June 20th. After June 20th, this crew will begin making permanent repairs and additions to the sprinkling system. A number of new tanks will be installed, old lines replaced with new, and the whole system improved.

A crew under Foreman Cobb will establish camp at

Madison Junction about June 3rd. From that point they can redeck four bridges in that vicinity—two over the Gibbon River, one over the Madison River, and one over Rex Perde Creek. After the bridges are decked about June 8th, the crew will be transferred to road repair work in the Gibbon Canyon.

The crew under Foreman White now working on road repairs in the East Forest Reserve will remain there until about June 8th, when they will be taken to Sylvan Pass to remove the snow.

About June 15th another crew of about ten men will be sent into the Pass from the Lake side to assist in removing the snow.

About June 17th, the sprinkler and small maintenance crew will be sent out to their respective stations to begin the season's work of sprinkling and maintaining the roads on the Loop.

Plans for the park ranger force contemplate the taking up of about 40 temporary rangers for summer duty and assigning them to their various stations and duties, which include fire patrols, information and guide service, checking automobiles at entrances, and regulation of park traffic, patrolling roads and formations, and enforcing park regulations in general. Padlocks have been procured and all snowshed cabins will be put in order and locked up for the summer.

One of the most important jobs which the ranger force is to attempt soon is the clearing out of fallen timber and making slight repairs as needed, to the many miles of trails in use in the park. One or two of these will require the services of a special crew of men due to the fact that the work will be heavy, as they have not been cleared out for some years, but this will not be attempted until after July 1st.

The permanent rangers at Canyon will assist in cutting out a trail for about two miles along the north rim of the Grand Canyon, down the river from Artist Point, enabling walking parties from the hotels and camps to go that much farther than they have done before.

The usual snow herd of buffalo will be brought into Headquarters about June 10th.

All concessioners are on the ground, or will be at an early date, making extensive preparations to take

care of the travel on the opening of the season.

The Northern Pacific Railway Company has supplied additional logs at the Hardisty entrance, and is building a shelter over the portion of the roadway opposite the passenger depot loading platform so the train passengers can be loaded in the park buses without getting out in the rain.

A small crew will go over the whole park and clean up the automobile camps, and see that a supply of wood is at hand for travelers. It is contemplated stationing one man permanently at the four biggest of these camps, namely, at Mammoth, Upper Basin, Lake, and Canyon, where hundreds of campers stop every night, to keep the camps clean and attend to the wants of tourists.

One of the most important pieces of work to be accomplished at Headquarters during June is the completion of the rooms in the stone bachelor quarters for use as a Museum and Information Office. There is still considerable carpenter work and plumbing to finish. It is to be painted throughout, new ceiling lights installed, and show cases and counters for displaying specimens, flowers, etc., and for use of the clerks, to be built. Such exhibits as are available are also to be prepared by the Park Naturalist and installed.

It will also be necessary to take up additional clerks for the work during the busy part of the season. Additional help will have to be procured for the switchboard and power plant so as to give service for longer hours. Many signs now being made by the painter must be put up, and the plumber will turn on the water at the main automobile camps, and in making plans to extend these camps where necessary and build one or two new ones where most needed.

VII. POLICIES:

The order prohibiting fishing in Beckler District, which has been in effect for about a year, was rescinded by Circular 3, May 14, 1921, which throws open the Falls River Basin up to the cliffs of the Madison and Fitchstone Plateaus and Mountain Ash and Proportion Creeks south and west of the Marysville road; Falls River proper, above the gorge, all with a limit of ten fish per person per day. A copy of Circular No. 3 is enclosed.

VIII. COST OF OPERATION;

This heading will be covered by the Cost of Work Report, which will be forwarded as soon as it can be completed.

IX. OTHER MATTERS OF INTEREST;

Wild Animals.

The general condition of all wild animals during May was excellent. The elk, deer, antelope, and sheep, wintered with but little loss, and in their present fine condition a goodly increase may be expected.

Buffalo, tame herd: The tame herd of buffalo grazed during the month on Specimen Ridge near the Buffalo Ranch. There were 46 young calves in the herd at the end of the month, an increase of 21 since the report for April. The latter part of the month the water in the Lamar River was very high and a few of the young calves were drowned in trying to cross it. The carcasses of six were found on the river banks. This herd is in excellent condition. The usual number of bulls will be brought into headquarters about June 18th for exhibition.

Buffalo, wild herd: Due to high water, it was impossible to get very close to this herd during the month. They were seen once at a distance and three young calves were noted with a herd of 25 buffalo.

Bears: Bears were in evidence in all parts of the park and caused considerable trouble in some of our stations which were not occupied, breaking in after food and doing considerable damage.

Antelope: Most all of the antelope have moved up to the summer range in apparently excellent condition.

Deer: A few deer still remain in the vicinity of headquarters, and one fawn has been noted among them. Like the elk and other animals, most of the deer which frequent the vicinity of headquarters have moved back to their summer grazing grounds.

Elk: Most of the elk have also moved back to their summer range, but there are still a few hanging around in the vicinity of headquarters. Several were seen on the plain in front of our office as late as May 20th. 17 elk which wintered at the Buffalo Corral.

at Mammoth, have been retained there so they can be seen by tourists.

Mountain Sheep: No reports were received on mountain sheep during the month as they had moved back and no patrols were made near their summer range.

Grazing: There is an abundance of grass in all parts of the park and the prospects for plenty of feed for next winter were never better.

Fishes.

During the early part of the month fishing was good in most of the streams in the park, and considerable fishing was indulged in by local residents, but more recently the water has become high in all the streams and there is but little fishing.

Arrests and Violations of Law.

None reported during the month of May.

Forest Fires.

No forest fires occurred in the park or in its immediate vicinity during the month.

Accidents and Casualties.

None of any importance were reported.

Sickness.

Doctor W.E. Crumbuck, who furnishes medical service to park employees under special arrangements with them, reports that he made 67 calls during the month of May.

Foreman Conelson became incapacitated on account of a severe attack of kidney trouble and is still in the hospital, at Chico Springs, where he went for an operation.

One case of small-pox occurred, already the subject of a special report, dated May 11st. This case, and the two men who were associated with the patient, are still in strict quarantine on the old target range near the mouth of Gardiner River.

Mr. Jack H. Harvey, who was employed as a motorcycle mechanic in 1923, returned during May to re-

sume this work for the summer. He was taken ill, apparently with tubercular trouble, and after a few days' severe illness was obliged to seek a lower altitude. ✓

Births.

An 8½ pound daughter, Gladys Mae, was born to Mr. and Mrs. Roy I. Gray on May 11th. ✓

A daughter, Laura Mae, weighing 9 lbs., was born to Mr. and Mrs. Bert L. Stinnett, on May 24th. ✓

Mr. Stinnett is our Master Mechanic, and Mr. Gray is an assistant in the blacksmith shop. ✓

Natural Phenomena.

The following notes on natural phenomena in the Park were furnished by Park Naturalist Skinner:

At Mammoth Hot Springs: Blue Spring (the spring that furnishes water to Jupiter Terrace) is still increasing slightly in activity, while the spring to the south remains the same as last month. The color on Jupiter Terrace is still improving and extending further to the south. Marble Terrace is becoming inconspicuous. While Angel Terrace is not as active as it was last month, it is just as beautiful, if not more so. The White Elephant is pretty much the same as last month, quite active, and highly colored. Bath Lake and the Devil's Kitchen continue normal. The large mound at Orange Spring is the same as last month, but the small cone at the side is showing increased activity. Narrows Gorge Terrace is a trifle more active than last month and about the same as per report of April 1, 1921. Minerva Terrace is entirely dry and has lost the color it acquired a month ago. Grand Terrace is increasing in activity and the color is very fine. Palette Spring is almost dead. Cleopatra Terrace continues the same as last month. Hymen Terrace is slightly more active than last month, but there is no indication that the improvement is permanent. ✓

Special Visitors.

Messrs. E.H. Hansen and Bruno Kramer, of the Hansen Packing Company, of Butte, Montana, called on May 12th, on business relating to the furnishing of fresh meat to the various interests in the park during

the coming season. This firm has made contracts with the Hotel Company, also with the Grange Company. For the summer, the local firm, the Hill Castle Corporation, of Gardiner, Montana, having called to make suitable bids for these contracts.

Mr. Eyrre Powell, Publicity Manager, Union Pacific Railway Company, visited the park on May 19th.

Motion Pictures.

No motion picture operators visited the park during the month, nor were any new permits issued.

Miscellaneous.

Entertainment: The last of the series of motion picture shows was held in the Post Exchange auditorium on May 14th.

Church Services: Both morning and evening services were held in the chapel on May 6th, and again on May 22nd. These services were conducted by Rev. J.P. Fritchard, Episcopal Missionary, under the direction of the Bishop of Montana.

As stated previously, I was out of the park from noon, May 26th, until the morning of June 1st. My return to the park through Sylvan Park has been described elsewhere. Although I went to Denver on business primarily connected with the operation of the Rocky Mountain National Park, en route to and from that city I had an opportunity to transact considerable business of importance to Yellowstone Park.

In Billings, I met Mr. Hugh Kirk, architect for the Yellowstone Park Hotel Company and the Yellowstone Park Transportation Company, and had an opportunity to discuss plans of certain structures that these companies contemplate building in the park.

I also had a chance, in the Public Library at Billings, to look over all of the magazines of the past two months and read a number of articles relating to Yellowstone Park, and particularly to the irrigation projects. Most important of these articles was one by Mary Roberts Rinehart, in the Ladies' Home Journal, for May, entitled "The Sleeping Giant".

In Denver I conferred with a number of railroad men regarding Yellowstone travel. Among these was

W.S. Bawinger, Passenger Traffic Manager of the Union Pacific. While in Denver, I also conferred with the E. Hardesty Manufacturing Company regarding steel signs for the park.

In Cheyenne, on May 28th, I spent several hours with State officials of Wyoming. I visited Governor Carey and talked with him about the proposed extension of the park and about the proposed dedicatory tour of the Wind River approach road. I conferred with Commissioner of Immigration Hill regarding publicity for the park and the direction of travel to and from opening gateways. I also saw Mr. Myre Powell, the General Publicity Agent for the Union Pacific Railroad. I visited the offices of the Cheyenne newspapers and wrote stories for them regarding the condition of roads in and leading to the park.

On the train coming up to Cody from Cheyenne on May 29th, I conferred with State Game Warden Judkins and with the new United States Marshal, Mr. Patton, also with State Senator Lee, a banker of Casper and Thermopolis.

In Cody, on May 30th, the Cody Club tendered me a dinner at the hotel, which was attended by about 40 people. I found that the Irma Hotel has been thoroughly overhauled and renovated during the past winter. It is as clean and as fine a hotel of its size as could be found in the west. This work has been done under the direction of Mr. J. Dayer, who is managing the hotel for Mrs. Cody. The rooms have all been cleaned and many of them have been repapered. Much new furniture has been procured, and the bedding is in excellent condition. The annex of twenty rooms which was built last year has also been overhauled and improved in many ways. The dining room service is in charge of a man named Otto Andrews, who has had many years experience as a chef. The food is excellent and well served. Prices are too reasonable and will have to be increased a little during the tourist season or Mr. Andrews will not be able to make a financial success of his venture. The lobby has been thoroughly renovated, the floors polished, and the pictures rehung. Some of the best of Colonel Cody's paintings have been hung in the lobby. The dance hall has been improved greatly.

I would suggest that the Harvins write a letter of commendation to Mr. Dayer. It will be much appreciated by him and will be a great encouragement

to him.

Mr. L. M. Wakeley, General Passenger Agent of the Burlington Route, met me at Cody and made a tour of inspection of the Cody approach road with me. I have already reported on our inspection of the box canyon of the Shoshone and advised you fully regarding the condition of the Canyon, turnouts, etc.

Mr. Wakeley and I spent the night of May 31st at Helm Lodge, and the next morning visited Pahaska, the resort at which people entering and leaving the park via the eastern gateway take their lunches. I found that Mr. Filer, Manager of the Pahaska, has greatly improved that resort by the addition of a building with lodging accommodations for from 150 to 200 people, and can serve 1,000 people per meal in his dining room. His rates are as follows:

\$2.50 per day for double room,
2.00 per day for single room,
1.00 per meal,
5.00 per day for room and board.

There is an enormous dining room and a very large kitchen on the ground floor, and eighteen bedrooms on the second floor. Many other improvements of minor importance have been made at Pahaska, but I am sorry to say that in shipping in material for these improvements, Mr. Filer's trucks damaged our part of the Cody road to such an extent that it will take between \$2,000 and \$3,000 to restore the road to its former condition.

Death of Chief Justice White: Flags at Park Headquarters and at all entrances were carried at half mast from the time of the receipt of your telegram on May 20th, to May 21st, in honor of Chief Justice White.

Circulars: Copy of Circular No. 2, issued May 1, 1921, relating to strict economy in handling Government business; and Circular No. 3, relating to fishing and which was mentioned heretofore in this report, are enclosed herewith.

X. RECEIPTS AND REMITTANCES:

There is enclosed a report, on the regular blank forms, of revenues due, collected, and transmitted, during the month of May. The total amount enclosed, \$247.64, as shown by this report, is described as follows:

Postal Money Order, No. 45360, dated May 2, 1921,
drawn by the Postmaster at Yellowstone Park, Wyo.,
on the Postmaster at Washington, D.C., to your
order, \$ 1.74

Check No. 1644, dated May 10, 1921, drawn to your
order by the Yellowstone Park Transportation
Company, on the National Bank of Montana, Helena,
Montana, 240.73

Check No. 856, dated May 23, 1921, drawn to your
order by the Yellowstone Park Camps Company on
the Northwestern National Bank of Livingston,
Montana, 8.15

Total, 247.64

Acknowledgment of receipt of the enclosed money is
requested.

Cordially yours,

Horace M. Albright,
Superintendent.

The Director,
National Park Service,
Department of the Interior,
Washington, D.C.

Enclosures.

June 1, 1921.



REPORT ON SEASONAL CHANGES.

To: Chester A. Lindsley, Assistant Superintendent.

From: M.P. Skinner, Park Naturalist.

Botanical: Flowers first seen blooming: Clover and Pasque flowers on the 4th; Shooting Stars on the 9th; Larkspur on the 11th; Barberry on the 12th; Blue Violets on the 14th; Dwarf Sunflower on the 17th; Gooseberry blossoms on the 18th; Chickweed, Spring Beauty, Fringed Gentian, and Yellow Bells on the 19th; Puccoon and Rock Rose on the 21st; Lungworth and Strawberries on the 22d; Avens on the 25th; Callypso orchid on the 26th; Clematis and Fleabane on the 27th.

Leaves started to grow on deciduous trees: Willows near Mammoth on the 5th; Aspen near Gardiner on the 12th and at 6500 feet elevation on the 24th; Birch, Alder, and Cottonwood along Gardiner River on the 18th.

Notable botanical features were the early blooming of most flowers and the rapid growth induced by copious rains. Pasque flowers and Yellow Violets were far more numerous than usual.

Birds: Migratory birds were first seen: Tree Swallow on the 2d; Swainson Hawk, Brewer Blackbird, Vesper Sparrow, and Audubon Warbler on the 3rd; Coot, Marsh Hawk, and White-crowned Sparrow on the 4th; Lewis Woodpecker and Kingbird on the 14th; Spotted Sandpiper on the 19th; Chipping Sparrow and Audubon Hermit Thrush on the 20th; Western Flycatcher and Catbird on the 24th; Trumpeter Swan, Mourning Dove, Yellow-headed Blackbird, Savannah Sparrow, and Pipit on the 29th; Wright Flycatcher, Pale Goldfinch, Bank Swallow, and Yellow Warbler on the 31st.

The month was notable for the earliest arrival ever recorded of Audubon Warbler, Catbird, and Goldfinch; for the large number

of Bluebirds (60% higher than any other May record), Audubon warblers (40% higher), and Crows (220% higher), seen; for the wide distribution of Catbirds, previously noted only along the Gardiner River; for the occurrence of Trumpeter Swan, Lewis Woodpecker, and Pale Goldfinch, all three of which are very rare in Yellowstone Park.

Mammals: The buck Mule Deer that shed his horns on Jan 15th now has new horns fifteen inches long whereas the buck that shed March 25th has horns six inches long; the average amongst all the other Mule Deer is now ten inches with the second fork indicated. Mule Deer began showing summer pelage on the 17th. The first fawn was seen on the 15th.

A few Elk remained about the plaza at Mammoth throughout the month but aside from these, elk have left the vicinity. New horns are one third grown. Elk began showing summer pelage on the 11th. The first calf was seen on the 28th.

19 Mountain Sheep were seen on the 4th along the rim of the Gardiner River Canyon, this being ~~the~~ a larger number than seen there during the winter just past.

Jack Rabbits were all changed to the summer color by the 10th.

Other: Peepers (hulas) were heard on the 4th.

Frogs were seen for the first time near Mammoth on the 18th.

Mosquitoes appeared on the 5th and became numerous about three weeks later.

Based on the above data, the season is now normal.

June 1, 1921.

REPORT ON INFORMATION SERVICE.

To: Chester A. Lindsley, Asst. Supt.

From: M.P. Skinner, Park Naturalist.

A total of 66 visitors visited the Information Office during the month of May.

201 Yellowstone Park publications were given out free of charge, also 38 publications dealing with other National Parks. 1 "for sale" publication was sold. 21 short letters in answer to simple inquiries were sent out; 9 more letters requiring longer, more technical replies were answered after spending the necessary time in searching out the information desired.



June 1, 1931.

REPORT ON INFORMATION SERVICE.

To: Chester A. Lindsley, Asst. Mgr.

From: W.P. Skinner, Park Naturalist.

A total of 66 visitors visited the Information Office during the month of May.

201 Yellowstone Park publications were given out free of charge, also 34 publications dealing with other National Parks. 1 "for sale" publication was sold. 21 short letters in answer to simple inquiries were sent out; 8 more letters requiring longer, more technical replies were answered after spending the necessary time in searching out the information desired.

Plans on Prepared Park.

The crew established out Indian Lake
engaged in graveling the road and that
only will continue that work until
June 15th, when it is proposed to
use of the teams for road work in
parts of the park. The two trucks and
teams left on the job will continue
using the road across Indian Lake until
July 1st.

About June 1st, a crew of 5 men
two teams will be taken to Humbug
where they will begin the work of
cutting & blasting the snow from the
d. It is expected that this crew will
be the first to travel by June 1st.

The crew working under program
will continue the work of turning
water into the shrubby supply tanks
as it is planned to have ready the
opening of the season June 1st. After
the 1st the crew will begin making

2
manent repairs and addition to the
existing system. A number of new tanks
to be installed, old flumes replaced
with new, and the whole system improved.

A crew under foreman Webb will
establish camp at Madison Junction
on June 3rd. From that point they can
reach four bridges in the vicinity, two
the Gibbon River, one over the Madison
River and one over May Perce Creek. After
the bridges are decked about June 8th,
the crew will be transferred to road
work in the Gibbon Canyon.

The crew under foreman White
is working on road repairs in
East Forest Reserve will remain there
until about June 8th when they will
be taken to Sylvan Pass to remove the
road.

About June 12th another crew of about
men will be sent into the Pass
on the Lake side to assist in excavating

shows.

That June 17 the soldiers and
all maintenance men will be
sent to their respective stations to begin
season's work of grubbing & maintaining
roads on the Corps.

Work in Progress

sprinkling system Pepsias:
The crew under Ben Ferrell
worked during the month
making repairs to the ^{the} road sprinkling system.
Four new tanks were installed and
ones calked and made ready
to hold water. Runways and ditches
that carry water to the supply tanks
were cleaned of debris and made
tight. *

A average crew for the month
was foreman, cook, 1 team, 1 teamster,
rough carpenters and 8 labourers.
Work was located at Mammoth
Springs until May 29th then
moved to Willow Park.

* This crew also made 5 days to
fix the old frame building opposite the
line, which had been dilapidated
and beyond repair.

Laman Bridge.

May 5th a crew in charge of
man Kelle started from headquarters
Mammoth for the Laman River to
old new trusses on the bridge near
Coke's old road across that stream.
Camp was made near Geeddy Creek
two days while the crew worked
out from the road between the
ice and fourteen mile note. On
7th, the road being clear, the
camp was moved to a place near
sixteen mile post where they
remained until May 10th, cutting
logs for the bridge. Then moved
and established camp at the
new site.

The trusses, each 60 feet in length were
made from 16 inch logs. The false
work under the bridge supported the
structure while the old trusses were removed
and the new ones set up. The work out

up on the bridge were replaced
the ~~new~~ ones and the two log cribs
were refilled with rock.

The work was completed May 31st.
average crew on the job consisted of
man, cook, teamster, 9 team and four
bores. (X1)

Whitestone East Forest Reserve
crew in charge of Foreman White,
engaged in making repairs to the roads
and bridges in the East Forest Reserve
throughout that work throughout the
winter. The rock filled log crib, situated
1/4 mile east of the Park line on
left bank of the Middle Fork of the
Snake River, on which work began
and 24th was completed May 12th.
The size of the crib is 50 feet long,
14 feet wide and 7 feet high inside
measurement.

From May 13 to 18th, general road

aintenance work was performed; road was graded, gravel hauled filled ruts and soft places and a number of small pole culverts constructed.

^{many} April 19th the camp was moved to point near Fifty Mile Creek. The roads in that vicinity were repaired and twelve foot span pole bridge and several small pole culverts built.

April 23rd. The camp was moved to Big Flat, 9 miles east of the Park. After making road and bridge saws in that locality they moved to Blackwater Creek May 31st.

April 27th, two men were taken up Sylvan Pass, where they stayed the rest of the month, blasting snow and ice in the big drifts.

The crew for the month consisted of a man, cook, truck driver, 4 skilled men & teamsters, 2 teams and 2 men labourers.

The crew in charge of Foreman
 nahan who were engaged the
 vious month, crushing and hauling
 it on the road along the Gardner
 in, about one mile from the
 rdner entrance, continued that work
 til May 13th, ^(to bad weather conditions) due to engine trouble
 the caterpillar tractor which supplied
 power to run the crusher, very slow
 press was made. Approximately 330
 ic yards of crushed rock was crushed
 & hauled on the road. The rock was
 not to a depth of three inches and
 roughly rolled.

From May 13 to 20th the crew was
 engaged in grading portions of the North
 rance Road, also dismantling the rock
 mkers and crusher and moving them
 Mammoth.

On May 20th, the camp was
 oved to Mammoth where it remained
 til May 25 while ^{a portion of} the crew hauled

went on the road to Gardiner, and
 and I men worked on the old
 supply reservoir, cleaning the mud
 vegetation from the bottom.

The crew was moved to Golden Gate
 where they remained the rest of
 month, hauling gravel from the pit
 Swan Lake Flat to the road between
 Golden Gate & Mammoth.

The size of the crew for the month
 ranged. foreman, cook, waiter, steam
 engine engineer, tractor engineer, 1 truck
 driver, 1 horse caretaker, 1 grassman, 5 char-
 sters, 7 teams and 8 laborers.

Report of Power Plant Operation for May 1921

Total KW Generated.	12890
Sold to Concessionaires	1196
Street Lighting	<u>469</u>
Overmont Lines & Buildings	<u>2360</u>
	10725
Peak Load 9 PM 5-22	40KW

2465

2465
10425

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

June 1, 1921.

REPORT ON WORK PERFORMED.

To: Chester A. Lindsley, Acting Superintendent.
From: M. P. Skinner, Park Naturalist.

Park Naturalist Skinner continued management of the Information Service as required to fulfill the wants of inquirers. One trip of eight days was made and specimens of leaves and associated fossils collected for the museum. In addition thereto a large amount of valuable data was collected, not only on these eight days but throughout the rest of the month. Notes were written up, two manuscripts were prepared, and photograph illustrations were secured for manuscripts previously written. Two inspections of various sections of forests were made for disease and tree insects. Special ^{studies} study of forestry and plants were continued. A small amount of work was done indexing books in the library. Other studies pursued by him, resulted in his notes on Seasonal Changes and Natural Phenomena, as embodied in this report.

In addition to the above some special work was done by order of the Park Superintendent.

June 1, 1921.

Brief Outline of Work accomplished during the month of

May by the Painting Division.

Painted: Service (Food) Room, White 5 Passenger Training, Mack #6 Truck, International, Old #8 20 - New #8 25 Truck, Signal #9 Truck Tanks, Painted and Rebuilt to #69. Mixed paint for Sprinkler and Tanks. Dr. Crawbuck's Quarters. Calumet and Remarking. Bids Quarters. Bathrooms. Painted Flagstaff. Put glass in skylight at Community House. Painted Mess Room Kitchen, Pantry and Dining Room. Put glass in Broom closet. Mixed paint for various jobs. Working on trail signs. Trespassing and Fishing Prohibition signs.

W. C. Hummer

✓

Fill out briefly and return to Mr. Lindsley before the 5th of the following month. Data needed for monthly report.

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

June 1, 1921.

REPORT ON NATURAL PHENOMENA.

To: Chester A. Lindsley, Acting Superintendent.

From: M. P. Skinner, Park Naturalist.

At Mammoth Hot Springs: Blue Spring (the spring that furnishes water to Jupiter Terrace) is still increasing slightly in activity, while the spring to the south remains the same as last month. The color on Jupiter Terrace is still improving and extending further to the south. Marble Terrace is becoming inconspicuous. While Angel Terrace is not as active as it was last month, it is just as beautiful, if not more so. The White Elephant is pretty much the same as last month, quite active and highly colored. Bath Lake and the Devil's Kitchen continue normal. The large mound at Orange Spring is the same as last month, but the small cone at the side is showing increased activity. Narrow Gauge Terrace is a trifle more active than last month and about the same as per report of April 1, 1921. Minerva Terrace is entirely dry and has lost the color it acquired a month ago. Mound Terrace is increasing in activity and the color is very fine. Palette Spring is almost dead. Cleopatra Terrace continues the same as last month. Hyacinth Terrace is slightly more active than last month but there is no indication that the improvement is permanent.

U. S. DEPARTMENT OF AGRICULTURE

WEATHER BUREAU

Yellowstone Park, Wyo.

WEATHER CONDITIONS--MAMMOTH HOT SPRINGS.

M A Y , 1921.

Temperature: Monthly mean, 44.6° , is 2.8° below normal. With the exception of the first 6 days, the temperature was consistently below normal. There were 11 days with temperature slightly below freezing, 26° being the lowest.

Precipitation: Total, 4.48 inches, is 2.57 inches above normal. This total is not only the greatest amount of precipitation for May, but is also the greatest monthly total for any month during the past 10 years. The first five days were generally fair, but the remainder of the month was characterized by cloudy and unsettled weather with almost daily precipitation. On the 27-28th, 1.55 inches fell in 24 hours, which is the greatest 24-hour precipitation for any month since October, 1908, when 2.34 inches occurred in a 24-hour period.

Snowfall: Total, 11.3 inches, has been exceeded twice in May, but the fact that the entire amount fell in one storm, and in practically a 24-hour period, renders it unprecedented for all months except February and October. A greater 24-hour snowfall has occurred but twice during the period of record, namely, 14.0 inches in October, 1919, and 13.1 inches in February, 1908. The greatest depth of snow on the ground during the storm was 10.8 inches at noon of the 28th. However, the snow melted rapidly and at 6 p.m. of the 29th but 1.0 inch remained on the ground.

Wind: The wind movement was unusually light, the maximum velocity being 28 miles per hour from the southwest on the 21st.

Sunshine: Percentage of possible, 45, is somewhat below normal.

E. H. Fletcher,
Observer.

June 2, 1921.

May 31, 1921.

Brief Outline of Work accomplished during the month of

May by the Forest Division.

WITH SHOP: 22 horses were shod for the rangers, buffalo farm, road camps, headquarter barn, and the hay ranch. 540 bolts, 1080 nuts, and 540 nuts ~~were~~ were made for the Lamar River Bridge, and work was done for the plumber and on plows, wagons, rock crusher, and passenger cars.

WATER SHOP: Tearing out and putting in new floor, and preparing cement range base in Mess House. Building forms at reservoir, repair screens, making new doors for garage, and getting out timbers for Lamar River Bridge.

REPAIRS: Repaired and worked on the following cars: 2 Signal, Studebaker 1-ton truck, Geo 2-ton truck, White 5-ton truck, National 2-ton truck, 2 Mack ~~2-ton~~ 5-ton truck, Dodge touring White 7 passenger touring car, White 5 Passenger touring car, 2-ton truck, and the Doctor's and Park Naturalist's cars. Also shop repairs needed and they also issued gasoline and oil as ordered by the various trucks and cars.

Fill out briefly and return to Mr. Lindsley before the 5th of the following month. Data needed for monthly report.

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

June 3, 1921.

Superintendent Horace M. Albright,
Yellowstone National Park,
Yellowstone Park, Wyo.

Dear Mr. Albright:-

I respectfully submit to you for your approval my monthly report of the activities of the Ranger Service for the month of May, 1921. This report includes the changes of regulations, final selection of temporary rangers, general improvements, and business affairs handled thru the Chief Ranger's Office.

My report is as follows:

General Conditions.

Stations.

As we have had no men stationed at the following stations, it will be necessary to detail men to these stations in the near future to have the grounds and station in condition for the opening of the season.

Madison Junction,	West Yellowstone,
Fountain,	Upper Basin,
Thumb,	Canyon.

VI ✓

I expect to have all changes of our permanent force with reference to station detail, completed before June 10th. Only tentative plans have been made.

General Conditions.

Trails.

Following your instructions, permanent rangers have been instructed to clean out all trails in their districts, and to repair snow-shoe cabins when needed. The trails in the Northern, North Eastern, and Western districts, are in fair condition at this time. Ass't. Chief Ranger Douglas, Southern and Eastern district, has had his ~~men~~ ^{men} cleaning out many of the old trails that have been out of use for many years. The work in this district will take considerable time and in several instances, trail crews will be necessary to put the trails in shape for use this season and fall.

VI ✓

Roads.

I regret that the patrolling of the main loop roads has not been as extensive as it should have been. The roads as a whole are in better condition than I have ever seen them in the many years that I have been connected with the park. Heavy trucking and tourist travel as well, has been restricted almost entirely to a case of necessity.

IV ✓

Many wash-outs, slides and obstructions have been taken care of thru the Ranger Service whenever possible.

✓

Cabins.

All cabins in the interior of the park will be locked up for the summer. I have received two dozen padlocks for this purpose with a universal key. Rangers in charge of each district will be held responsible for the government property in all of the cabins in their district. Of late years these cabins have been used by trail crews and horse-back tourists without permission, consequently, we have lost many supplies. Persons forcing entrance to the cabins will be taken into custody on a charge of molesting government property and buildings.

VII ✓

General Conditions.Improvements.

Fish Lake Cabin.

We have completed the erection of a new cabin at Fish Lake upon the request of Mr. W.K. Thompson, of Bozeman, Mont., who desired our co-operation with the United States Bureau of Fisheries in establishing a hatchery at this lake for propagation of fish in waters in and out of the park. Mr. Thompson is to be responsible for all liabilities connected with the work, which was conducted under the direction of First Assistant Chief Ranger Harry Trischman. He was assisted by Park Rangers, Burkett, E. Anderson, Winn and Dewing.

Thru later correspondence with Mr. Thompson, I understand the Bureau has decided to construct a permanent and larger hatchery at Fish Lake. The building we have practically completed for them measures, 14' X 24', inside measure, 6'8" walls, two 62" X 33" windows, one 33" X 33" window, one foot allowance for the eaves and a six foot extension roof over the front of the cabin, facing the creek, to be used as a porch.

Trail.

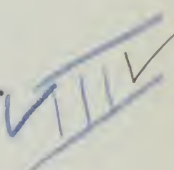
I have issued orders to Ass't. Chief Ranger E.T. Scoyen to supervise the clearing of a trail between Artist Point, along the rim of the Grand Canyon to a point opposite Inspiration Point. These orders have been issued following your conversation with Mr. Howard Hays, in which the construction of this trail was suggested.

I have had Mr. Scoyen go over this proposed ground to the Silver Cord and he reports that the trail can be built with little trouble. The trail will follow the brim of the Grand Canyon over the entire distance between Artist Point and Silver Cord. No grading will be necessary.

General Conditions.Improvements.

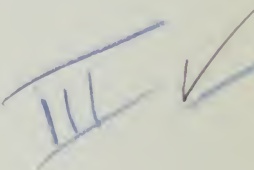
Lake Cellar.

Rangers Bicknell and Davis have completed digging a new root cellar at the Lake Station. The cellar was built upon orders of Ass't. Chief Ranger Douglas. It is eight feet deep, six feet wide, and eight feet long, covered with and decked with eight inch logs. About six feet of dirt covers the cellar and a tunnel about five feet long leads into it.




Snake River Fence.

Rangers Earl Bowman and William Purdue, have completed building a fence around a grassy area at the Snake River Station which is to be used as a pasture. The fence encloses an area of about 31 acres.




Snow Work.

Orders were issued to Ranger James N. Dupuis, Tower Falls Station to direct and co-operate with Frank Lind, operator of the Cooke City Stage line, in the clearing of snow in the Devil's Gut. It was necessary to use powder in a stretch of about 500 yards. The work consumed about ten days.




Ranger Roby R. Wisdom, Sylvan Pass station has been co-operating with Foreman White in breaking up the snow in Sylvan Pass. Powder was used to crack the snow, which was reported to be about 25 feet deep at its greatest depth.



Wash-outs.

Co-operating with Chief Engineer Burney in the washout on the Tower Falls road between the 15 and 16 miles posts, I instructed Ranger James Dupuis to take charge of the repair work.



General Conditions.Improvements.

Washouts. (Cont'.)

This washout was caused by a congestion in a culvert, caused partly by the breaking of the log stringers supporting the bridge. New logs and decking have made it temporarily ready for travel. Two men and a team was sent out by the Engineering Department, taking three days to the work.

Two sections of the road on the Madison River was under water ~~and~~^{since} 29th. Ranger Ford Purdy turned the water with temporary dams and filled in the sections of the road washed out.

We received a report of a washout in the Gibbon Canyon Sunday morning, ~~June~~^{Sunday} 29th, from C.A. Hamilton of the Upper Geyser Basin, who said about a mile and a half of the main loop road was under water, Chief Engineer Burney was notified and with the assistance of Park Ranger W.M. Bishop and two laborers, temporary dams were thrown along the road and all obstructions removed from the river. The water damaged the road to the extent of approximately \$350.

Slides.

Many slides of rock, dirt and trees have been reported during the month. With the exceptions of a few instances, the rangers have been able to handle the situations themselves. The slide causing the most trouble was on the Gardiner-Mammoth road on the night of the 28th, when many ton of rock slid into the road, with several boulders, weighing more than a ton, which temporarily blocked the road.

Telephone System.

The telephone lines over the entire park have been repaired throughout the winter by the men in the interior of the park, but the condition at this time is serious and will need the attention of regular linemen.

Patroling.

Hunting Patrols.

Bear hunters have been working along the north park line throughout the month, four of which have been successful in their hunt. Three of these were killed in the Hellroaring district and four in the Crevice district. Patrols were made during the month in the interests of the park. No depredations were found.

IX

Fishing Patrols.

It was necessary to detail a man to patrol the Gardiner and Yellowstone Rivers during the first of the month. Reports were received that local residents were exceeding the limits in these rivers.

IX

Roads.

All men have been instructed to patrol the roads for the purpose of clearing log jams and to turn the high water off of the road where rivers, creeks, and springs are washing it out.

✓

Special.

Ass't. Chief Ranger Douglas made a special trip to the Beehler Station with instructions for Little regarding fishing regulations and with instructions to Cottrell to report at Mammoth, where he is to be transferred to the Engineer Department. He will be re-instated next fall.

Fence Patrol.

Rangers Lawson, Larsen and Dewing were ordered to the Black Tail range to ride the fence around the pasture for government horses. These men were employed in this work three days.

III

The horses of all rangers and those owned by the National Park Service will be transferred from the Yancy range to the Black Tail.


VI

Regulation Changes.

Fishing.


Bechler River.

Your orders of May 16, 1921, opened the fishing in the Bechler District, namely, in Falls River, up to the gorge; in Boundary, Mountain Ash, and Proposition Creeks, and the Bechler River; not to extend farther east or north than the Marysville road. The fishing in this district has been closed during the last year. The limited area of fishing was based on the fact that the upper regions of the streams were recently stocked with small fry.



Fish Lake.

The large number of trout spawning in Fish Lake between May and July made it necessary to prohibit fishing in the lake. The suggestion was made and acted upon by you May 20, 1921.

Personnel Changes.

Appointments.

The following named men have been appointed for work in this department, their appointments taking effect during the month:


Mr. Edward Burkett, permanent park ranger at \$100 per month, plus increased compensation and quarters; effective May 10, 1921.

Mr. John N. McDonald, assistant buffalo keeper, at \$100 per month, plus increased compensation, and quarters, at Buffalo Farm.

Mr. Ira D. Fleming, assistant buffalo keeper, at \$100 per month, plus increased compensation, and quarters, at Slough Creek Ranch.

Upper Yellowstone.

Rangers Davis and Russell, Upper Yellowstone Station, abandoned their district May 15th on account of the high water. No men in district now.



Personnel.

List of 1921 Rangers.

The men listed below will comprise the permanent ranger force during the summer:

1. James McBride.
2. Harry Trischman,
3. Joseph O. Douglas,
4. Elvend T. Scoyen.
5. Peter Lawson,
6. George Winn,
7. Raymond G. Little,
8. Wendell M. Bishop.
9. Roby Roy Wisdom,
10. Sam T. Woodring,
11. James N. Dupuis,
12. Roy T. Frazier,
13. Albert L. McLaughlin,
14. Calvin O. Davis.
15. Clifford Anderson,
16. William N. Purdue,
17. Edward Burkett,
18. Ford Purdy,
19. Thad C. Pound,
20. Luther Custer,
21. Hans Larsen,
22. Court B. Dewing,
23. Earl S. Bowman,

W. A. E.

24. Emmet S. Matthew,
25. Hollis N. Matthew,
26. William H. Harrison,
27. Elmous M. Meade,

Re-Appointments.

28. Wm. C. Troutman,
29. Sam Hurless,
30. Russell Sprankel,
31. Leon D. Mink,
32. Vernon S. Downs,
33. Wendell S. Keate,
34. Frank J. Parsch,
35. Ray S. Teesdale,
36. Eugene V. Robertson,
37. Frank H. Knight.

The above mentioned men will report for duty on or about June 15th, 1921, according to instructions sent out May 5, 1921.

Personnel. (Cont'.)

1921 Temporary Rangers.

The following named men have been or will be appointed temporary rangers and will report for duty at the Chief Ranger's Office on, or about, June 15th, 1921.

38. Gordon Cottier,
39. F.L. Carter, ?
40. Edw. B. Cogswell,
41. Carrol P. Donohoe,
42. Fred C. Finch,
43. Cyril C. Moore,
44. Paul R. Wylie,
45. Marguerite Lindsley,
46. E.P. Buckenmyer,
47. Robert J. Potter,
48. Frank.H. Schramm,
49. James S. Baker,
50. Roger D. Baker,
51. John T. Needham,
52. Warren H. Loyster,
53. Clarence E. King,
54. Harold E. Pammel,
55. Pierce A. Cumings,
56. Florian J. Ubel,
57. Samuel A. Kaplan,
58. G.S. Ferguson,
59. Mary A. Rolfe,
60. Kenneth W. Krippene,
61. Milton H. Lichtenwallner,
62. Chester L. Butler,
- 63.- Belnap C. Hawkes,
64. Elmer P. Little,
65. William Mondell,
66. Hugh D. Cramer,
67. Robert Armstrong,

*Acting without
Appointment to*

With Henry Anderson off of the permanent force for the summer, this leaves us two short of a complete active force and one short, according to our regulation.

Personnel. (Cont'.)

Rangers on Leave.

The following named rangers were granted leave of absence during the month:

Sam T. Woodring, 5/5 to 5/17.

A.L. McLaughlin, 5/16 N. to 5/19 N.

A.L. McLaughlin, 5/24 N. to 5/27 N.

Unemployed Rangers.

Due to circumstances which make it necessary for the ranger department to drop some of its permanent force to co-operate with other departments, we will not have the services of the following named men:

Park Ranger Lee Cottrell, transferred to the Engineer Department for work on the roads. Will be dropped June 2, 1921. To be taken up 9/10/21.

Park Ranger Henry Anderson, will be placed in charge of the department pack trains during the summer and will also have charge of cleaning up auto camps. He will remain with the department but will not perform the duties of a ranger until the latter part of September.

Park Ranger Albert T. Bicknell will be dropped by this department June 18th to permit him to manage the Yellowstone Park Boat Co., at Yellowstone Lake. Bicknell has had charge of this work for several years and is returning to it to render better service to the interest of the park and upon the request of the company and yourself. He will be taken up by this department again September 18, 1921. His services on the active force terminated June 2, 1921.

Travel.

Travel on the park roads during the month was unusually heavy considering season conditions both in and outside of the park.

The travel report by entrance follows:

Travel. (Cont.)

Entrance.	Cars.	People
North,	44	131
West,	7	17
Total		148
Cooke Stage.		6
T O T A L	51 Cars	154 People.

During the same month of the year 1920, the records show that 25 people entered the park as visitors, while the statistics show above, includes nothing but automobile and stage park visitors. This is an increase of 129 over the year 1920 for the same month.

Trucking and Freightage.

On account of heavy snows and rains, we have held the park roads closed to all trucks while the roads were in a soft condition. The greatest single length of suspension of traffic was from Saturday morning, May 28, until Tuesday morning, May 31.

The first loaded trucks to be permitted out in the park was on Tuesday, May 31, when two trucks, with light loads left for the Upper Geyser Basin with supplies for the Hotel Co., and for Mr. C.A. Hamilton. A truck owned by the Yellowstone Park Camps Co., was sent to Tower Falls with supplies, May 26.

Road Conditions for Travel.

According to information obtained from men who have been in the Yellowstone Park for a number of years, the roads are in better condition at this time than they have ever seen them. Every effort is being made to protect them for the summer, our co-operation in this matter, being more extensive than ever before in the history of the Ranger Service, but at the same time, plans are already being made to make this operation more extensive.

Game Conditions.

With practically all snow off of the mountains, I am pleased to report that the big game herds in the park have gone through the winter with less than the natural loss to be expected. The long winter, just closed, has been, by far, the most successful from a game standpoint than any other year in the history of the park.

Buffalo, Tame Herd.

During the early part of the month the old cows in the herd began to drop their calves. Due to the fact that they are in exceedingly high flesh, the calves were not as strong as usual. At one time during the month, there were fifty-two new calves, but at the end of the month this number was reduced to forty-six. Six carcasses have been found along the Lamar river banks, the calves have attempted to cross the river during high water. They are now feeding back on Specimen Ridge, away from the river banks.

Fourteen bulls of this herd will be brought to Mammoth for our show herd on June 18th. We expect to ship one bull to Sheridan, Wyo., and possibly another during the month of June.

Buffalo, Wild Herd.

High water conditions made it impossible to get near this herd in the Cache creek district. They have been seen at a distance and reports, though unconfirmed, are to the effect that three calves are with the herd of twenty-three animals.

Bear.

Warm weather brought out the bear in large numbers. They have caused considerable trouble at our ungarrisoned stations and at some of the resorts, but so far, no cases have been serious. They are not in the best of condition.

Game Conditions. (Cont'.)

Antelope.

These animals have pulled thru the winter better than was expected. Our reports during the entire winter show that only four of the band in the northern district were killed or died of natural causes. They have left the northern district ~~and~~ the Lamar river and the Black Tail ranges.

Deer.

The first fawn deer of the ~~year~~^{year} was seen by Ranger W.M. Bishop below the power plant at Mammoth on May 25th. He thought the animal must have been several days old at that time. No losses during the month were reported. I have had no reports of White Tail deer during the past two months. Apparently they have left the lower districts.

Elk.

No attempt was made this spring to count the elk herds in the park, nor have we made any attempt to make any kind of an estimate on the herds. They have stood the strain of the winter beyond expectations and have had the advantage of being unmolested during their breeding season.

May

A calf elk was seen 20th near the old saw-mill above the Mammoth Hotel. This is the first one reported this season. The herd in the Buffalo Corral has been reduced to seventeen head. One of which is a two year old bull.

Mountain Sheep.

Herds of Mountain Sheep have been seen back in their favorite summer haunts. No reports have been received to indicate that they have suffered any losses during the winter. No lambs have been seen this season.

Miscellaneous.

Ice.

Ice breaking up in Yellowstone Lake on May 21st and 22nd, threatend the Fishing Bridge for several days. As the result of our precautions, no damage was done. When the ice broke up it was twenty-six inches deep, four inches thicker than in 1916, the year considerable damage was done as the result of ice jams.

IX

Snow.

All records for snow-fall, in one storm was shattered May 27th and 28th, when eleven and three tenths inches of snow fell at Mammoth. According to local weather bureau statistics, such a snow storm has never been recorded. Though the snow soon melted, the trees suffered to some extent and traffic on all roads was held up for three days.

L

The storm did not reach the center of the park, reports indicating heavy rains. All rivers were bank full and most sloughs under several inches of water. Nothing serious developed.

Accidents.

Ranger Henry Anderson was struck on the thigh by a rolling log at Fish Lake, during the construction of the cabin, which resulted in a serious infection. The leg is causing considerable trouble.

Cordially yours

Chief Ranger.